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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,161	03/01/2002	Andrew D. Schmitz	SD-209A	8049

7590 10/06/2003  
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EXAMINER

NGUYEN, CAM N

ART UNIT PAPER NUMBER

1754

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**10/085,161**

Applicant(s)  
**Schmitz**

Examiner  
**Cam Nguyen**

Art Unit  
**1754**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Mar 1, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 & 3 6) ☐ Other:

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## DETAILED ACTION

### *Claim Objections*

1. Claims 1, 3, 5, 9, & 11-13 are objected to because of the following informalities:
    - A. In claim 1, line 3, “which” should be deleted.
    - B. In claim 3, line 5, “being again” should be deleted.
    - C. In claim 5, line 1, “carrier” should be deleted.
    - D. In claim 9, line 2, “carrier” should be deleted.
    - E. In claim 11, line 1, “carrier” should be deleted.
    - F. In claim 12, line 1, “carrier” should be deleted.
    - G. In claim 12, line 4, “phosphorous” should be --phosphorus--.
    - H. In claim 12, line 6, “hydronium ionis” should be --hydronium ions--.
    - I. In claim 12, lines 3-6, the claim should be rewritten as follows:

--The process of claim 1 wherein the said aqua-thermal treatment comprises carrier washing in aqueous solutions of mineral acids including hydrohalic; hydrooxyhalic acids; the oxyacids of nitrogen, phosphorus, and sulfur; carboxylic acids; sulfonic acids; or phosphonic acids, such that the molar concentration of hydronium ions is between 0.0001 and 5.0--.
    - J. In claim 13, line 1, “carrier” should be deleted.
- Appropriate correction is required.

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***Claim Rejections - 35 USC § 112 (Second Paragraph)***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3-4 & 12-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. Regarding claim 3, it is unclear as to what applicants intend to recite. Is the calcination required after each washing cycle or step?

B. Claim 4 recites the limitation "the wash-calcine-wash sequence" in line 1. There is insufficient antecedent basis for this limitation in the claim.

C. Regarding claim 12, line 5, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

D. Regarding claim 13, lines 4 & 6, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

***Claim Rejections - 35 USC § 102(b)***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 9-10, & 14-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Takada et al., "hereinafter Takada", (US Pat. 6,103,916).

Takada discloses a silver catalyst which formed by depositing silver on a carrier having  $\alpha$ -alumina as a main component thereof and used for the production of ethylene oxide (see col. 7, claim 1). The carrier is subjected to washing with water at 90°C for 30 minutes. The carrier washed was dried thoroughly at 120°C, then impregnated with a complex solution of silver salt, subsequent heating, further dried at 120°C for 1 hours, and heat-treated in a stream of air at 280°C for 48 hours. Thereafter, the resultant composite was heat-treated in an atmosphere of nitrogen at 530°C for 3 hours to obtain a silver catalyst for the production of ethylene oxide. (see col. 5, Example 1, ln 50-54).

Regarding claims 1, 14, & 15, Takada discloses the claimed catalyst carrier, a silver catalyst, and a process of preparing a catalyst including the improvement step as recited in claim 1, thus anticipates the claims.

Regarding claim 9, the claim is met by the reference since Takada discloses subjecting the carrier to a heat treating temperature of 90°C (see Takada at col. 5, Example 1, ln 50-54). The disclosed temperature falls within the claimed temperature range.

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Regarding claim 10, Takada discloses washing the carrier with water, preferably pure water (see Takada at col. 3, ln 60-63), thus meets the claim.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-8 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al., "hereinafter Takada", (US Pat. 6,103,916), as applied to claims 1, 9-10, & 14-15 above, and further in view of Jin et al., "hereinafter Jin", (US Pat. 5,063,195).

Takada discloses a silver catalyst and a process of preparing catalyst thereof as described above, except for the following differences.

Regarding claims 2-4, while Takada does not disclose multiple washing and calcining steps as being claimed, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have done the same in the process of Takada in order to remove impurities in the carrier material and ensure complete conversion of alumina hydrate (or compound) into pure alumina (or  $\alpha$ -alumina) and to obtain a highly stable catalyst because it is

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conventional to so in the catalyst art. Calcination of a carrier is known and has been done as evidenced by Jin (see Jin at col. 3, ln 11-14).

Regarding claims 5-8, Takada does not disclose calcining the carrier at temperatures above 200°C. It would have been *prima facie obvious* to one of ordinary skill in the art to have calcined the carrier at the calcination temperature as suggested by Jin, which is from 1450°C to 1550°C for about 2 to 6 hours, so that all of the alumina converted to  $\alpha$ -alumina (see Jin at col. 3, ln 11-14) because it is known to do so.

Regarding claim 11, Takada does not disclose washing the carrier with aqueous solutions ammonium fluoride. It would have been *prima facie obvious* to one of ordinary skill in the art to have washed the carrier with such known solution to obtain an improved carrier material because Jin fairly suggests that ammonium fluoride make alumina easy to transform into crystals and said alumina is converted completely into  $\alpha$ -alumina crystals during the calcination, which benefits the elimination of unnecessary micropores (see Jin at col. 2, ln 65-68 & see also col. 1, ln 52-55). Jin discloses using the ammonium fluoride in the amount of from 0.5 to 5.0 percent by weight (see Jin at col. 3, ln 1-4).

8. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takada et al., "hereinafter Takada", (US Pat. 6,103,916), as applied to claims 1, 9-10, & 14-15 above, and further in view of Mross et al., "hereinafter Mross", (US Pat. 4,530,910).

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Takada discloses a silver catalyst and a process of preparing catalyst thereof as described above, except for the following differences.

Takada does not disclose washing the carrier with aqueous solutions of mineral acids or salts of the metals being claimed. It would have been *prima facie obvious* to one of ordinary skill in the art to have washed the carrier of Takada with aqueous solutions of carboxylic acids and alkaline earth metal salts to result in a more active carrier and catalyst because it is known in Mross to do so for the same carrier (see Mross at col. 2, ln 7-67 & see also col. 1, ln 42-47).

#### ***Citations***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Moskovitz et al. (US Pat. 5,985,790), Warthen et al. (US Pat. 3,853,789), Yamada et al. (US Pat. 4,260,524), Solomon et al. (US Pat. 4,361,504), Lockmeyer (US Pat. 6,368,998 B1), Lockmeyer (US Pat. 6,579,825 B2), Bhasin (US Pat. 5,057,481), Thorsteinson et al. (US Pat. 5,187,140), & Alter et al. (US Pat. 4,400,308) are cited for related art.

#### ***Conclusion***

10. Claims 1-15 are pending. Claims 1-15 are rejected. No claims are allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Cam Nguyen, whose telephone number is (703) 305-3923. The

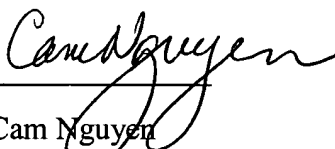
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examiner can normally be reached on M-F from 8:30 am. to 6:00 pm, with alternative Monday off.

The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310 (before finals) and (703) 872-9311 (after-final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Nguyen/cnn *CNN*  
September 28, 2003

  
Cam Nguyen  
Patent Examiner  
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